

REMARKS

In view of the above amendments and following remarks, reconsideration of the rejections contained in the Office Action of June 28, 2004 is respectfully requested.

It is initially noted that a number of minor editorial changes have been made to the specification and abstract for the sake of readability and form.

Further, original claims 1 and 2 have now been canceled and replaced with new claims 3-10. It is noted that independent claim 3 corresponds substantially to original independent claim 2, with several additions to the language. Independent claim 7, the only other independent claim, corresponds to claim 3, but recites the magnetic recording-and-reproducing device in combination with the swing door, while including the same limitations to the swing door as recited in claim 3. Dependent claims 4-6 and 8-10 correspond respectively and depend from claims 3 and 7, respectively. All of these claims clearly distinguish over the prior art cited by the Examiner.

The present invention is directed to a swing door that is mounted to a cassette inlet of a magnetic recording-and-reproducing device. A preferred embodiment is illustrated in Figs. 1 and 2, while the prior art is illustrated by Figs. 4 and 5.

In the prior art, it can be seen that a coiled spring 3 that is used to bias a door 1 to a closed position on a panel 5 of a magnetic recording-and-reproducing device is mounted to one of the pivot pins 2, which are used to pivotally mount the door 1 to counter bearings 6 on the inside of the panel 5.

As recognized in the Background of the present invention, however, it may happen that a strong force is applied to the door which breaks a pivot pin. With the arrangement in the prior art, the spring can come off of the broken pivot pin. Because the spring is usually made of metal, this might cause a short-circuit in the device, and the spring might not be easily located on the inside of the device. Thus the object of the present invention is to provide a swing door which resolves this problem and which allows the swing door to be mounted to the cassette inlet without risk of the resilient member coming off of the pivot pin during mounting.

Accordingly, the present invention provides a swing door 1 including a rectangular plate having opposite pivot pins 2 projecting in the longitudinal direction of the plate from opposite ends

of an upper longitudinal edge of the plate, as shown in Fig. 1. The opposite pivot pins 2 are supported by counter bearings 6 of the front panel of the device, as illustrated in Fig. 2. A recess 8 is provided in the upper longitudinal edge of the plate, the recess being notched inward and spaced apart from one of the opposite pivot pins 2. In particular, it can be seen from Fig. 1 that it is located along the edge spaced apart from, but adjacent to, one pivot pin 2 in the exemplary embodiment.

Engagement pins 9a and 9b are provided in the recess in alignment with the opposite pivot pins 2, i.e. along the pivot axis. A coiled spring 3 is mounted to the engagement pins 9a and 9b in the recess. Opposite end extensions 7a and 7b of the coiled spring 3 are thus laid on the plate and on the front panel of the device.

With the above-described arrangement, by providing the recess along the upper longitudinal edge, when the swing door is used on the inside of, for example, a VCR, as VCR doors are normally set on the inside of the front panel thereof, the recess will be hidden by the panel.

Further, by having the engagement pins, to which the coiled spring is mounted, in alignment with the pivot pins, the torque applied to the door during opening and closing of the door is allowed to be constant.

By having the coiled spring mounted on the engagement pins in the recess, which recess is on the upper longitudinal edge spaced apart from one of the opposite pivot pins, even if one of the pivot pins is broken, the coiled spring 3 will not be lost.

The above-described invention is reflected by independent claim 3. The claim requires a swing door to include a rectangular plate having opposite pivot pins projecting in a longitudinal direction in the plate from opposite ends of an upper longitudinal edge of the plate so that the opposite pivot pins can be supported by counter bearings of a front panel of the device. The claim further requires a recess in the upper longitudinal edge of the plate that is notched inward and spaced apart from one of the opposite pivot pins. The claim further requires engagement pins in the recess in alignment with the one of the opposite pivot pins as well as a coiled spring mounted to the engagement pins in the recess. The coiled spring has opposite end extensions, one of which is laid on the plate and the other of which can be laid on the front panel of the device. Such features are not properly suggested by the prior art cited by the Examiner.

Firstly, the prior art of the present application referenced by the Examiner, Figs. 4 and 5, does not include engagement pins in a recess in addition to pivot pins as claimed. To supply the features of the recess, engagement pins and the coiled spring mounted at this location, the Examiner refers to the patents to Vance and Sullivan. However, neither of these patents suggests modifying the prior art to arrive at the presently claimed invention.

Turning first to Vance, the Examiner refers to a hinge locker door 14 having a coiled spring 21 provided in a recess by engagement pins 22. The Examiner notes the benefits cited in Vance of the spring being readily positioned and not adding materially to the cost or difficulty of construction.

Looking at the combination of Vance with the prior art, even if this combination is made as proposed by the Examiner, features of the claims are still missing. Claim 3 requires the recess to be along the upper longitudinal edge of the plate. However, in Vance the springs are fixed to projections 22 along the frame of the door 14. Thus, even if the combination is made, this feature of all of the claims is not present.

Because the recess is formed along the upper longitudinal edge of the plate that forms the swing door in the present invention, the coiled spring is mounted to the plate itself, and the recess is allowed to be along the upper longitudinal edge, which can be hidden from view when the door is closed (compare Figs. 1, 2 and 3 of the present application). In Vance, the recesses are in plain view.

Claim 3 further requires that the engagement pins in the recess be in alignment with one of the opposite pivot pins, with dependent claims further requiring that they be aligned with a pivot axis of both the opposite pivot pins. This allows the coiled spring, mounted on the engagement pins, to be along the pivot axis, and allows torque applied to the door to be constant during opening and closing of the door, as discussed above. In Vance, on the other hand, the axis of the coiled spring, or the projections 22, is not in alignment with the pivot axis of the hinges 16. This non alignment of the axes in Vance causes changes of torque to be applied to the door during opening and closing of the door. If this were applied to a VCR door, this might allow the door to not be tightly closed.

It should be further pointed out that the engagement pins are provided in the recess in alignment with the opposite pivot pins, and thus at the upper longitudinal edge of the plate. This is not the case with Vance.

However, it must be further pointed out that one of ordinary skill in the art would not have considered any combination of Vance with the prior art of the present application in the first place. While the Examiner cites Vance as teaching the benefit of the ready positioning of the spring and the lack of adding materially to the cost or difficulty of construction by the use of the spring, this discussion is the context of the existence of the spring in the first place. The prior art of Figs. 4 and 5 already has a coiled spring positioned on pivot pin 2 which serves to close the door 1. There is nothing from Vance which would suggest any improvement over this arrangement. The primary object of Vance is to provide means for exerting spring tension upon the door in the direction of closing, which is already the case with the prior art. The further object is to provide a spring door locker in which the spring may be readily positioned and will not add materially to the cost or difficulty of construction. This is also clearly the case with the Prior Art, even more so than Vance in fact, because a coiled spring is simply slipped over the pre-existing pivot pin 2. This clearly makes it readily positionable and clearly does not add material cost or to the difficulty of construction, particularly as compared with Vance, which requires the addition of notches in the frame of the locker.

Thus, one of ordinary skill in the art in looking at the prior art would have no reason or motivation from Vance to make any modification of the prior art. There is no justification to experiment with any such changes. There is no recognition of the problem with the prior art in Vance; the present inventor has recognized that the prior art does have problems if a force is applied to the door that causes the pivot pin 2 to be broken. Vance does not recognize this problem. Because there is no motivation or benefit taught by Vance, one of ordinary skill in the art would not have looked to Vance to make any combination with the prior art. This becomes even further clear when it is considered that Vance is directed to a spring door locker, and is clearly not directed to the problems associated with swing doors in magnetic recording-and-reproducing devices.

Thus the Examiner's conclusion that it would have been obvious to modify the spring bias door of the prior art to provide a spring fixed in a recess held by engagement pins is without proper foundation in the evidence. The cited motivation of ready positioning of the spring without the

addition of material cost or difficulty of construction would not in fact apply to the prior art, because the spring is already present, and Vance would only add to the cost.

The Examiner's further comment at the top of page 3 that the location of the spring in Vance is a mere mechanical expedient, and that one of ordinary skill in the art "would have found it extremely obvious to substitute one well-known location for a coil spring for another" is without foundation and is respectfully, but most adamantly, traversed. The location of the recess with the spring is not a mere mechanical expedient in the present invention. Its positioning along the upper edge allows it to be hidden while still carrying out the function of biasing the door to be closed, and still allowing for its positioning along the axis of the pivot pins. It is not a mere rearrangement of parts, as characterized by the Examiner.

The Examiner further rejects the claims over the prior art in view of Sullivan. This combination of references is even more remote from the present invention as claimed in claims 3-10 than the combination of the prior art and Vance.

Sullivan is directed to a spectacle case in which walls 10 are formed with inwardly extending fulcruming projections 11 which are received within an arcuate recess 12. The projections 11 terminate in studs 13, between and around which is positioned a coil spring 14. The spring serves to automatically swing the cover section from its closed position to its open position when the cover section is manually released.

The Examiner cites the motivation of the combination with Sullivan as being the benefit of a biasing means serving to bias the VCR door. However, there is already a biasing means biasing the VCR door in the prior art. Accordingly, there is no additional advantage provided by Sullivan. For this reason alone, the combination of references would not be made by one of ordinary skill in the art.

Further, even if the combination is made, the structure claimed in the independent claims of the present application is not the result. Sullivan does not suggest both opposite pivot pins and engagement pins in a recess in alignment with the pivot pins. Nor does Sullivan suggest the location of the recess along the upper longitudinal edge as claimed. Thus even if the combination is somehow attempted, the structure required by independent claims 3 and 7 cannot be the result.

And in fact there is no proper motivation from one of ordinary skill in the art to attempt a combination between the spectacle case of Sullivan and the VCR of Figs. 4 and 5. Sullivan wants to bias the cover to the open position, while Figs. 4 and 5 want to bias the lid to the closed position. Most particularly, however, there is no reason why one of ordinary skill in the art would attempt any combination. There is no benefit from making any combination that is properly suggested by Sullivan. The benefit cited by the Examiner does not improve the prior art; this benefit is already present in the prior art. Thus one of ordinary skill in the art would clearly not have attempted any combination of Sullivan with the prior art.

With respect to the Examiner's further comments concerning the spring location of Sullivan, similar to the Examiner's comments regarding the spring location of Vance, the Examiner is referred to the above discussion in which it is pointed out that the location of the recess and the coiled spring as required by claims 3 and 7 is not a "mere mechanical expedient."

For the above reasons, it is submitted that all of the claims pending in the present application distinguish over the prior art of record. Indication of such is respectfully requested.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact Applicant's undersigned representative.

Respectfully submitted,

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September 17, 2004